**Numerical Simulation of 3-D Field of Systems Using Permanent Magnets**, A. BELOV, V. KASHIKHIN Jr, V. KUKHTIN, E. LAMZIN, Yu. SEVERGIN, N. SHATIL, S. SYTCHEVSKY - Peculiarities of numerical simulation of spatial field of magnet systems, concerning permanent magnets are considered. Two approaches are analysed. The first one is based upon the finite element method with the use of the program package KOMPOT. It permits to carry out a precision analysis of magnet systems. The second approach is based upon analytical expressions for homogeneous magnetizing polyhedrons and cylindrical sectors with the use of program packages DIAMOND and CLONDIKE. Real magnetic properties of materials are taken into account. Both the approaches add meetuably each other and permit to carry out an effective analysis of magnet systems when in design. The results of numerical simulation of real magnetic systems as well as comparison to experimental data are presented.